CLASSIFICATION CONFIDENTIAL
SECURITY INFORMATION
CENTRAL INTELLIGENCE AGENCY

INFORMATION FROM
FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT

CD NO.

50X1-HUM

COUNTRY USSR

SUBJECT Economic - Coal-cleaning plants

HOW PUBLISHED Daily newspaper; monthly periodicals

WHERE PUBLISHED Moscow

DATE PUBLISHED Feb - Mar 1953

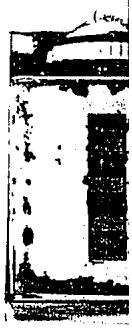
LANGUAGE Russian

DATE OF INFORMATION 1950 - 1953

DATE DIST. 5 Aug 1953

NO. OF PAGES 3

SUPPLEMENT TO REPORT NO.



THIS IS UNEVALUATED INFORMATION

SOURCE Newspaper and periodicals as indicated.

DATA ON USSR COAL-CLEANING PLANTS, FEBRUARY - MARCH 1953

VOLCHANSK COAL-CLEANING PLANT ... ITS PNEUMATIC METHOD -- Moscow, Master Uglya, No 2, 1953

Lignite of the northern Urals, mined by the open-pit method, is used as fuel coal. The Bogoslovskiy and Volchansk deposits contain a large amount of volatile substances and a little sulfur. Moisture and ash are detrimental elements of lignite. Excessive moisture in the coal impairs the combustion process and increases the specific heat of the flue gas. Furthermore, moist coal freezes easily, which is a great disadvantage in the severe climatic conditions of the Urals. The percentage of ash in the coal is increased mainly by mechanical admixtures of rock from the rocky interlayers of the coal seam. However, a separation or, as it is called, selective removal of the coal and rock, is practically impossible, particularly with the use of heavy excavators. Therefore, the problem of removing the rock, that is, the cleaning of the coal, must be solved after the coal has been extracted.

The permissible ash content of coal differs depending on its destination, and it ranges in the case of Ural lignites from 20 to 30 percent. Actually, the ash content of the mined coal ranges from 40 to 50 percent. Excess ash in coal lowers the calorific value of the fuel, accelerates the wear and tear on the boiler installation, complicates ash removal, and necessitates increased consumption of electric power for grinding the excess rock. Coal cleaning is very important from the viewpoint of relieving transport as well as for improving the quality of the coal.

In 1950, the first experiments in the mechanical cleaning of lignite were carried out at the coal-cleaning plant of the Volchansk deposit. The pneumatic method of cleaning, based on the separation of coal from rock with the aid of a pneumatic current, was found most effective. The pneumatic separator consists of a table with surfaces or decks slightly sloping at an angle of 4-6 degrees. The surface of the table is covered by grate screens through which air is transmitted in the amount of about 1,000 cubic meters per ton of coal cleaned. Along the table steel grooves are installed which serve to guide the rock moving along the deck.

CLASSIFICATION CONFIDENTIAL

STATE	X	NAVY	X	NSRB	DISTRIBUTION
ARMY	X	AIR	X	FBI	

The deck of the separator has a jigging movement, oscillating 250-350 times per minute and with a range of 12 millimeters. The coal loaded from one end of the table of the separator moves along the deck and, during this process, air is blown in, causing the coal to break into layers. The rock, being heavier than the coal, settles in the grooves along the deck while the coal slides down the inclined deck into receiving hoppers. The rock passing along the entire length of the table goes off into a trough at the end of the table.

This rather simple process of dry cleaning coal permits the removal of a large amount of rock. Coal up to 50 millimeters in size is cleaned in the separators. Experiments carried out with Volchansk coal permitted a removal of 30-40 percent of rock from the total mass of extracted coal. At the same time, losses of pure coal in the rock did not exceed 5 percent. The amount of rock in the concentrate ranged between 0.75 and 1.5 percent. Such indexes for pneumatic cleaning of lignite from the open pits of the Volchansk deposit are to be regarded as good.

IRMINO CENTRAL COAL-CLEANING PLANT RECONSTRUCTS FLOTATION INSTALLATIONS -- Moscow, Master Uglya, No 2, 1953

The Irmino Central Coal-Cleaning Plant is striving to increase the output of high-grade coal for the coke by-products industry. The plant exceeded the 1952 plan for the processing and output of concentrate and also improved the quality of its product. The ash content of the concentrate was lowered to 7.56 percent, as against a planned 8.2 percent, and was 0.88 percent lower than in 1951. At the same time, the output of concentrate was 5 percent higher than in 1951.

The reconstruction of the flotation installations played an important part in increasing the capacity of the flotation shop. Formerly, there were two eight-cell machines in operation and, in using them, repeated cleaning had to be carried out which lowered productivity and made additional consumption of reagents necessary. These eight-cell machines were reconstructed into three-cell ones and, as a result, the concentrate is discharged from all three cells after only one batch of reagent has been used and the quality of the tailings is slightly lowered.

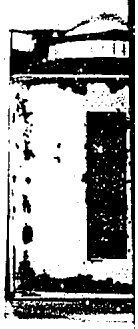
In an effort to reduce production costs, oil containing phenol was replaced by sulfonated kerosene not containing phenol.

Efficiency suggestions of workers and engineers have been adopted with the aim of raising the performance of the flotation machines to a maximum and reducing production losses to a minimum. One of these suggestions concerned the recovery and return to the flotation machines of water which had overflowed and gone to the sludge tanks. Formerly, considerable concentrate was washed out with this water, but now this concentrate is being recovered.

The productivity of the shop continues to grow. Soon four screens will be put into operation, the productivity of the drying installation will be improved, and continuous operation of the hydromonitor at all times of the year will be assured.

DEHYDRATION MACHINERY IDLE AT TKVARCHELI COAL-CLEANING PLANT -- Moscow, Trud, 20 Feb 53

The Tkvarcheli Coal-Cleaning Plant is a large enterprise equipped with the most modern mechanisms, including four centrifuges installed for the dehydration of coal after wet cleaning. According to the plan, the centrifuges



were to start operation in the first quarter 1952 but actually they are not yet working. Meanwhile, the need for them is great since the moisture in coal interferes with the operation of enterprise boiler shops, and, in addition, the wet coal itself freezes in cold weather and has to be chopped when being unloaded. This lowers the quality of the coal and causes idleness of railroad cars.

According to data of the directorship of the enterprise, the moisture content of coal arriving at the plant in 1952 ranged from 6.3 to 9.1 percent; after wet cleaning, this figure went up to 11.8 percent. With this moisture content, if not a greater one, the coal was shipped to the consumers. These figures indicate that the plant director, Babadzhani, and the chief mechanic, Yezugbaya, do not pay proper attention to the dehydration of coal and cling to obsolete standards for the moisture content. Centrifuges reduce this moisture content to 5-8 percent, and the shipment of coal with this lesser moisture content would protect the consumers from paying for several percent of water at the price of coal. In this connection, not only the saving of the Tkvarcheli plant must be considered but also that of all the enterprises of the Transcaucasus which the plant supplies with coal.

METAL SAVING POSSIBLE IN COAL-CLEANING PLANT CONSTRUCTION -- Moscow, Za Ekonomiyu Materialov, No 3, 1953

Coal-cleaning and coal-briquetting plants could be made largely of reinforced concrete instead of metal. However, designs for coal-cleaning plants which were inspected in 1951 provided for metal frameworks, floors, and other parts of the buildings.

The Yuzhgiproshakht Institute now plans coal enterprises without making any effort to save metal. A coal-cleaning plant constructed entirely of metal is being planned by the institute at a mine under construction. A total of 624 tons of metal will be used for the building: 331 tons for girders and joints, 156 tons for columns, 94 tons for the framework, and 43 tons for staircases. All of these structural elements could be made of reinforced concrete and still answer all the exploitational and technical requirements for such a building.

Metal coal-loading bunkers requiring 185 tons of metal have been planned for this plant. In this case, reinforced-concrete bunkers would be better than metal for these reasons: they conduct less heat; they require less repair; and they are less subject to deformation from the impact of lumps of coal being loaded into them.

- E N D -